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BRITISH BRICK SOCIETY

INFORMATION 100

MAY 2006

OFFICERS OF THE BRITISH BRICK SOCIETY

Chairman E-mail: jwpc2@cam.ac.uk	Dr James W.P. Campbell	Queens' College CAMBRIDGE CB3 9ET
Honorary Secretary E-mail:	Michael S Oliver micksheila67@hotmail.com	19 Woodcroft Avenue STANMORE Middlesex HA7 3PT
Enquiries Secretary Tel: 01494-520299 E-mail mh@bulldoghome.com	Michael Hammett ARIBA	9 Bailey Close HIGH WYCOMBE Buckinghamshire HP13 6QA
Membership Secretary *(Receives all direct subscriptions, £10-00 per annum*)*	Anthony A. Preston	11 Harcourt Way SELSEY West Sussex PO20 0PF
Editor of *BBS Information* (*Receives all articles and items for* BBS Information) Tel: 01608-664039 E-mail: davidkennett@stratford.ac.uk (term-time only)	David H. Kennett BA, MSc	7 Watery Lane SHIPSTON-ON-STOUR Warwickshire CV36 4BE
Honorary Treasurer *(For matters concerning annual accounts, expenses)* and **Bibliographer**	Mrs W. Ann Los	"Peran" 30 Plaxton Bridge Woodmansey BEVERLEY East Yorkshire HU17 0RT
Publications Officer	Mr John Tibbles	Barff House 5 Ash Grove Sigglesthorne HULL East Yorkshire HU11 5QE

* *The annual subscription to the British Brick Society is £10-00 per annum. Telephone numbers of members would be helpful for contact purposes, but will* **not** *be included in the Membership List.*

OFFICERS OF THE BRITISH ARCHAEOLOGICAL ASSOCIATION : BRICK SECTION*

Liaison Officer	Michael Hammett	Address as above

* *Members of the BAA may join its brick section and, as such, will be eligible for affiliation to the British Brick Society at a* reduced *annual subscription of £7-00 per annum; BAA Life Members have a waiver of the subscription but they should inform the BAA:BS secretary of their interest so that they can be included in the Membership List.*

British Brick Society web site:

http://www.britishbricksoc.free-online.co.uk/index.htm

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Cover Illustration:

The brick church at Chignal Smealy, Essex, of 1527

Editorial:
One Hundred Not Out

Buried deep in the editor's files is an ancient document, two cyclostyled pages, printed both sides of a single sheet, the editor's personal copy of *British Brick Society Information*, **1,** 1972. It was written by the late Geoffrey Hines, one of the four men who in 1971 met to discuss the founding of a society devoted to the study of brickmaking and of bricks and their uses. Geoffrey, who was the society's inaugural honorary secretary. died on 3 April 2001 (see obituary in *BBS Information*, **84,** June 2001 and appreciation, *BBS Information*, **86,** December 2001); by when one of his fellow discussants, Lawrence Shepheard Harley, the society's founder-president, had been deceased for several years. Lawrence Harley died on 5 November 1983 (see obituary, *BBS Information*, **33,** February 1984). It was Lawrence who in a letter to Geoffrey dated 16 March 1971 set the ball rolling for that preliminary meeting. The third of these four died only recently. Ronald Firman (obituary in this issue of *BBS Information*) died on 18 August 2005. Ron had served for some years as the society's enquiries secretary. The fourth, a man younger than the others, Terence Paul Smith is happily still with us. Terence has been the society's chairman for the last twenty years, having previously acted as editor of *British Brick Society Information* from 1983 to 1990, and still occasionally acts as guest editor.

The present editor recalls a story which various of the early members of the society like to recount of how a distinguished librarian had said that newsletters and periodicals such as *British Brick Society Information* have a few issues, sometimes even more than one a year, but suddenly they begin to fade and ultimately fizzle out with a whimper not a bang and thus disappear without trace. Perhaps in the early days, *BBS Information* did appear to be ephemeral. The impression today is very different: a strong publication, three and occasionally four issues a year, with varied contents reflecting members' interests and the society's range of activities. In 2005, there were no fewer than six meetings, all well supported, with between eighteen and forty members attending.

The volume of contributions held by the editor and promised for future issues means that there seems to be no danger of the society's journal folding.

As editor for the past fifteen years, I thank all those who have contributed to make *British Brick Society Information* a much respected journal.

The serious study of brick buildings in Britain could be said to have begun with the publication in 1925 of *A History of English Brickwork* by Nathaniel Lloyd, although there had been some earlier forays into the topic by J. Kestell Floyer and the architect John Bilson. Nathaniel Lloyd was a self-taught architect who was originally a printer by trade. Amongst Nathaniel Lloyd's other claims to fame was the saving of the house at Great Dixter, Northiam, East Sussex, and allowing Edwin Lutyens to meld on to it another house so as to produce a dwelling sufficiently large to accommodate Lloyd's family of six children, the youngest of whom was the celebrated gardener, Christopher Lloyd. His horticultural skills were fit to rival those of the creator of the garden at Great Dixter, Miss Gertrude Jeckyll. Christopher Lloyd died full of honours on Friday 27 January 2006: he was eighty-four.

The serious daily newspapers contained extensive obituaries: *The Guardian* and *The Times* on Monday 30 January 2006. It is a matter of considerable regret that the society's Visits Co-ordinator had not been able to arrange a meeting at Great Dixter during Christopher Lloyd's lifetime, to hear reminiscences of his father and the collaborations between his father and Lutyens and between Lutyens and Miss Jeckyll at both Great Dixter and elsewhere.

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Two quite distinct subjects for articles in future issues of *British Brick Society Information* have been proposed. As the material suggested for each of the topics looks to be sufficient to provide the nucleus of an issue, we hope to arrange such issues in 2007 and 2008.

From time to time, the editor receives papers and notes about the use of brick in churches and as this file has become more than half full, it seems worthwhile at this stage to invite further contributions for a 'Brick in Churches' issue of *British Brick Society Information* in the early part of 2007, probably *BBS Information,* **104,** May 2007. Members with material for an issue of *BBS Information* devoted to 'Brick in Churches' are asked to inform the editor of their contribution by 25 December 2006 and to submit by 28 February 2007.

The other subject concerns the transport of bricks, on one aspect of which the editor of *BBS Information* spoke at the forty-first International Congress on Medieval Studies at Western Michigan University in Kalamazoo in May 2006. The subject of the lecture is 'Brick on Water: the possible and the impossible'. The editor has already received two other contributions on other aspects of the transport of bricks topic and hopes than further material will be submitted for inclusion in a future issue, hopefully in 2008.

The editor is happy to receive submissions by e-mail attachment or by disc. However, would contributors please note that it would be very much appreciated if when illustrations are submitted by e-mail or by disc they are sent as *individual* and *separate* files or attachments, and please not included with the main text. This is to facilitate transfer of text and illustrations from the office computer, whose word processing facility is a recent version of Microsoft Word to the one at home where the editor retains his preference for WordPerfect: the latter, in an earlier version, is how he learnt to use word processing almost two decades ago. It is also appreciated if a print-out of the text is included with a disc.

DAVID H. KENNETT
Editor, *British Brick Society Information,*
Shipston-on-Stour, 1 March 2006 and 27 May 2006

OBITUARY:
RONALD JOHN FIRMAN, 1929–2005

The Editorial to *BBS Information*, **98**, November 2005, included a brief note reporting the death, on 18 August 2005, of Ronald John Firman, aged 76.

Ron, as he was always known to us, was born on 6 May 1929 with cerebral palsy, which affected his co-ordination and, in due course, his speech. Despite this, he went on to a life of academic and other achievements which might shame many of us mercifully spared such disability. As a child, he was greatly helped by his mother, who not only travelled many miles in search of physiotherapy for her son, but also encouraged co-ordinated movement by placing his toys just a little out of reach. But from an early age, too, Ron himself displayed that personal strength of character and determination which, in later years, always so impressed those of us who met him at British Brick Society and other meetings: amongst other things, the young Ron insisted on learning to ride a tricycle, despite repeatedly falling off and having to remount. The same determination was equally evident in his being able to drive a car, as he showed when he came to two of the society's meetings in Essex: both at New Hall, near Chelmsford, and at Bulmer Brickworks and Cressing Temple.

Ron was educated, between 1940 and 1948, at City of Norwich School, where his interest in geology was fostered by a much admired teacher. He proceeded to the University of Durham, where he read geology. In 1950, whilst still an undergraduate, he became a Student Demonstrator in Geology. In spite of his disability, he captained and kept goal for his college hockey team. He graduated B.Sc. (Hons) in 1951. By 1953, in significantly less time than the three or more years usually taken for such projects, he obtained his Ph.D. from Durham for a thesis on *Metamorphism and Metasomatism around the Shap and Eskdale Granites*. During this period of study he continued as a Student Demonstrator.

In 1953 Ron was appointed Research Assistant in Geology at Manchester University, and it was there that he met his future wife, Patricia (Pat), a graduate technician who remained a constant support throughout his life. She sometimes collaborated with him in his work, principally, so far as members of the British Brick Society are concerned, on 'A Geological Approach to the Study of Medieval Bricks', in *Mercian Geologist*, **2**, 3, 1967, pp.299–317, a seminal paper which opened up a wholly new way of looking at historical bricks and brickwork.

In 1954 Ron moved to the University of Nottingham. The rest of his academic career was spent in that institution and the rest of his life in that city. At first he was Assistant Lecturer in the Department of Geology – now, alas, defunct – and in 1955 became Lecturer in Geology. His services and loyalty were appropriately rewarded in 1967 by his promotion to Senior Lecturer in Geology. He later served as Honorary Senior Research Fellow in Geology and, between 1989 and 1997, as unpaid Senior Research Fellow in Archaeology. Various professional honours justifiably came his way: he was elected a Fellow of the Geological Society and as a Fellow of the Institution of Mining and Metallurgy he also held the status of Chartered Engineer.

His teaching covered a remarkably wide range of geological and related activities, not only within his university but also for the Workers' Educational Association. He also contributed to various conferences and congresses. But geologists cannot be confined to the desk or the rostrum, and Ron engaged in a good deal of fieldwork, not only in Britain but also in Turkey and in Canada. This had begun back in undergraduate days, when doubt was expressed as to whether his disability would permit him to take part in fieldwork: Ron's response was the simple, uncompromising, and characteristic, 'Try me!'. Fortunately, they *did*. On his various excursions he could become totally absorbed in what he was doing. The address at his funeral service recalled an occasion at Beverley when Ron was so engrossed in the study of a stone floor-slab that he was crawling backwards from the altar whilst the congregation were taking their places for a service. It was left to Pat to make the explanations!

Yet the desk was an important place of work too, and Ron published numerous papers and book reviews in various professional publications, mostly geological but also, of course, in *British Brick Society Information*. An early contribution, written jointly with Pat, was 'Bricks with Sunken Margins' in *BBS Information*, **31,** November 1983. 'Techniques for Drying Bricks - a critical appraisal of the evidence' was the principal paper in *BBS Information*, **39,** May 1986. In *BBS Information*, **47,** February 1989, there is 'Loessic Brickearth and the Location of Early Pre-Reformation Brick Buildings in England - an Alternative Explanation', written with Pat, a thoughtful rejoinder to an earlier paper by Ian Smalley. His paper on 'The Colour of Brick in Historic Buildings' appeared in *BBS Information*, **61,** February 1994, and to *BBS Information*, **74,** June 1998, he contributed a long article on 'Gault: a geologist's cautionary tale of words as a barrier to understanding'. All of these repay rereading and are especially valuable to those of us who are not geologists. And with Pat, he not only wrote that pioneering paper already mentioned, but also contributed two pamphlets on the geology of Roman-to-Tudor bricks to a series published by Harrison Mayer Ltd in their *Monthly Bulletin for the Ceramic Industry*, **430**, October 1975, and **431**, November 1975, as well as a consideration of bricks from Brixworth

church, Northants. in *Journal of the British Archaeological Association*, **130**, 1977, pp.100–102. He was also editor of *Mercian Geologist.* for many years.

Ron's wide range of duties at Nottingham included work in the Department of Architecture; and it was this, writes Pat in a personal letter, 'that directed his interest towards building materials, which resulted in the brick studies. / The move to archaeology followed almost logically, and tied in very nicely with Ron's interests and activities – a good reason for looking round churches and ruins!' This extension of his interests led, in 1971, to Ron becoming a founder of the British Brick Society, together with the late Lawrence Harley and the late Geoffrey Hines, with a then still youthful Terence Smith serving as acolyte. Thereafter, Ron remained one of our most loyal and active members, joining us on many of our meetings in various parts of the country. It was at his instigation that we held a second visit to The Midland Grand Hotel, St Pancras (later St Pancras Chambers): his active life prevented Ron from joining the first visit.

Between 1994 and 2002 Ron acted as our Enquiries Secretary. To this position he brought some of his most endearing qualities: a strong sense of duty, patience, courtesy, and a nice sense of humour. He was assiduous in dealing with all enquiries, either by a personal reply or by passing them on to those with relevant specialist expertise. Inevitably, perhaps, some of the enquiries that he received seemed somewhat trivial: he nevertheless dealt with them patiently and courteously, never resorting to condescension. Others of the enquiries might seem a little bizarre, and frequently in his AGM reports – whether delivered personally or by a written communication – Ron would amuse us with his typically wry comments on these more curious enquiries. When reporting personally, or otherwise contributing to our AGM discussions, Ron always impressed with his courage, for speech did not come easily to him.

A fellow sufferer, Valerie Lang of Scope, recalls with a bluntness which Ron would not have resented, that his speech 'was difficult to understand'. Yet, she adds, when asked to repeat what he had said, he never showed impatience. The writers of this present tribute, and many other members of the British Brick Society, can confirm this.

Most of us in the British Brick Society had no idea that Ron had been active in Scope, mainly in its earlier years when it was still known as the Spastics Society – although on reflection it really should come as no surprise: a man of Ron's innate humanity quite naturally wanted to draw on his own experience to help others. Amongst his many achievements was the launch of the Cerebral Palsy Helpline. Ron was elected a member of the Executive Council of the Spastics Society, where his 'confidence was inspiring and his judgement respected'. In many ways, Valerie Lang continues, Ron 'laid new foundations for the body that is now Scope'.

Members of the British Brick Society will naturally reflect on Ron's academic contributions to our shared interest. But in August 2005 we lost more than a knowledgeable and judicious scholar – we also lost an inspiring and warm-hearted human being, a true friend who will be greatly missed by us all. Our sympathies go to Ron's widow, Pat – who has helped enormously by providing *curriculum vitae* information for this appreciation – and to his children.

TERENCE PAUL SMITH
DAVID H. KENNETT

The British Brick Society: Thirty-Five Not Out

David H. Kennett

Publication of the one-hundredth issue of *British Brick Society Information* seems a convenient moment at which to pause in order to bring together a short, but hopefully comprehensive, account of the society's meetings and other activities since the last time this was attempted in connection with the society's first twenty-one years, in *British Brick Society Information,* **59,** June 1993. The editor well recalls completing the typing of that issue at the very beginning of his brief sojourn in Bristol in latter part of 1993. Most of that issue was a long editorial entitled 'The Society Comes of Age'. It included events up to the Annual General Meeting in June 1993 at Waltham Abbey with its visits to Rye House, Hertfordshire, and Nether Hall, Roydon, Essex.

These present observations review the society's activities from 1993 to the end of 2005, thirteen years in total. They follow the same general order as the previous notes.

OFFICERS

The honorary officers of the society in these twelve years have been remarkably long-serving, Terence Smith became the society's Chairman in 1986 and has remained in office since then; he has indicated that he now wishes to relinquish the post so that the society can develop further under someone else's overall guidance. Michael Hammett was elected Honorary Secretary in 1982 and remained in office until 2005, a remarkably long tenure. Michael Oliver was elected as Honorary Secretary at the 2005 Annual General Meeting. Other secretarial posts connected with the society are the Membership Secretary and the Enquiries Secretary. Moya Hammett, Michael's wife, acted as the former for several years, until Keith Sanders was elected at the 1997 Annual General Meeting at Avoncroft Museum of Buildings, Bromsgrove. He served until moving to France. Anthony Preston became Membership Secretary at the 2004 Annual General Meeting, held at Gloucester Docks. A number of members have fulfilled the role of Enquiries Secretary: David Kennett relinquished office during his stay in Bristol owing to lack of access to his books and Ronald Firman took office from 1993 until 2003, when Michael Hammett resumed the role he had additionally held in the 1980s. Evelyn Hammersley had become Honorary Treasurer in 1987 and remained in office until 1999 when Ann Los became the society's Honorary Treasurer, in addition to its Bibliographer. In 1999, John Tibbles assumed the role of Publications Officer, which had previously been one of the roles undertaken by Ann Los. David Kennett was elected Editor of *British Brick Society Information* in 1990 and remains in post; he also acts as the society's Visits Co-ordinator.

MEMBERSHIP

Membership of the society has grown from the 254 in 1992 recorded in the last review of the society's activities to just over 300 today.

MEETINGS

The society has held an Annual General Meeting in a different location each year since 1993, and since 1997, alternating the location between south of a line connecting Boston with Birkenhead (approximately the modern A57) and north of a line connecting Great Yarmouth with Birmingham and Shrewsbury and including all of Wales (approximately the modern A47

TABLE 1
ANNUAL GENERAL MEETINGS, 1993-2006

1993	Waltham Abbey, Essex: the Town Hall *Visits:* Nether Hall, Roydon, Essex, and Rye House, Hertfordshire.
1994	Cattybrook Brickworks, Almondsbury, near Bristol *Visit:* Bridgwater, Somerset
1995	Horncastle College, Lincolnshire *Visits:* Tattershall Castle and other brick buildings in Tattershall; Tower-on-the-Moor, Woodhall Spa; Horncastle; Baumber Brickyard; the church of St Lawrence, Bardney.
1996	Weald and Downland Open-Air Museum, Singleton, near Chichester, Sussex *Visit:* Weald and Downland Open-Air Museum
1997	Avoncroft Museum of Historic Buildings, Bromsgrove, Worcestershire *Visit:* buildings at Avoncroft Museum of Historic Buildings
1998	Sidney Sussex College, Cambridge *Visits:* Jesus College; Magdalene College; St John's College
1999	Trinity Arts Centre, Gainsborough, Lincolnshire *Visit:* Gainsborough Old Hall
2000	The 'Greyhound' public house, Kew Green *Visit:* Kew Palace
2001	Thoresby College, King's Lynn *Visit:* perambulation of King's Lynn
2002	St George's church hall, Portsmouth *Visit:* Fort Nelson, Portsdown Hill
2003	The Village Hall, Jackfield, Shropshire *Visits:* church of St Mary the Virgin, Jackfield; brickmaking by Tony Mugridge
2004	Gloucester Docks *Visit:* National Waterways Museum, Gloucester
2005	Thoresby College, King's Lynn, Norfolk *Visits:* East Barsham Manor and Great Snoring Manor, Norfolk.
2006	Burseldon Brickworks, Hampshire *Visit:* Burseldon Brickworks

as extended by the M54). By moving the Annual General Meeting around Britain it is hoped that members can contribute at least on a bi-annual basis to the running of the society. The location Annual General Meeting with a note of the subsequent visit is given in Table 1, (this page, above). Fuller information on each of these visits has been recorded in an issue of *British Brick Society Information* following the meeting.

In the mid-1980s, the society revived the idea of local visits, beginning with an Autumn Meeting at Farnham, Surrey, in 1986. This set the pattern for many of these meetings: a visit to a brickworks in the morning and a town walk in the afternoon. These meetings have increased from one or two in the year to four and even five. A wide range of places has been visited.

TABLE 2

SPRING, SUMMER AND AUTUMN MEETINGS, 1993-2006

1993	March	Bedfordshire	1930s brickwork in Luton; Houghton House; Ampthill.
1994	April	Essex	Marks Tey Brickworks; Colchester
	May	Lancashire	Bolton
	September	Gloucestershire Worcestershire	The brickworks of Northcot Brick Pershore - brick buildings in the town.
1995	April	Hartfordshire	St Albans
	May	Lancashire	Salford
	July	Kent	Chiddingstone Brickworks at Bore Place, Chiddingstone.
	October	Lancashire	Shaws of Darwen terracotta works; Manchester terracotta on buildings.
1996	March	Bedfordshire	Kempston Brick; and Bedford
	April	Yorkshire	York Handmade Brick Company Ltd, Alne; and York
	September	Buckinghamshire	Eton College
1997	April	Lancashire	Liverpool: walk to see brick buildings
	May	Warwickshire	Birmingham and its brick buildings
1997	Autumn	Hertfordshire	Hatfield and Hatfield House
1998	Spring	Lincolnshire	Williamson Cliff Brickworks. Little Casterton; Aslackby Manor House
	July	Essex	New Hall, Boreham; St Michael's church. Woodham Walter; Maldon Tower, Maldon.
	Autumn	Dorset	Beacon Hill Brickworks, Corfe Mullen; the old town, Poole
1999	April	Yorkshire	Leeds: walking tour of the city centre
	May	Buckinghamshire	Chenies; the brickworks of H.G. Mattthews at Boddington
	September	London	The western part of the City of London
2000	Spring	Sussex	Brighton Sewers; Lewes - town walk
	July	Essex	Bulmer Brickworks; Cressing Temple; Faulkbourne Hall.
	September	Nottinghamshire	Ibstock Brick Factory, Dorket Head. Arnold; 'Kingshaugh', Darlton
	November	Sussex	Glyndebourne - the Opera House

2001	Spring	Yorkshire	Burton Agnes Hall, near Bridlington
	July	Hampshire	Basingstoke: the Chapel of the Holy Ghost, the offices of Daneshill Brick Company, and Basing House.
	September	Hampshire	St Margaret's Priory, Titchfield; Titchield village; St John's church, Shedfield
	November	London	St Pancras Chambers, the former 'Midland Grand Hotel'; London Canal Museum
2002	February	London	St Pancras Chambers, the former 'Midland Grand Hotel'; London Canal Museum
	March	Warwickshire	Brick kiln of the Oxford Canal Company at Fenny Compton; All Saints' church, Harbury; the brick arch at Chesterton.
	April	Essex and Suffolk	Gestingthorpe - church and Hill Farm Kentwell Hall
	July	Cambridgeshire	Cambridgeshire Brick and Tile Company at Goose Hall Farm, Burwell; brick in the city of Ely.
	October	London	Lord's Cricket Ground
2003	Spring	Warwickshire	Stratford-upon-Avon: Royal Shakespeare Theatre; brick buildings in the town.
	Autumn	Staffordshire	Cradley Heath Special Brick Company; the Black Country Museum, Dudley
2004	February	London	Red House, Bexleyheath (4 visits)
	Summer	Yorkshire	Castle Howard Mausoleum, the Temple of the Four Winds
	August	London	Lambeth Palace
	Autumn	Oxford	Brick in the University of Oxford
2005	Spring	East Sussex	Ibstock Works at West Hoathly; Balcombe Viaduct; 'Standen', East Grinstead.
	July	London	Lambeth Palace
	August	Scotland	Errol Brick Company, Perthshire; Dundee
	September	Leicestershire	Charnwood Brick Company
	Autumn	London	Eastern part of the City of London; Brick Lane area of Whitechapel.
2006	Spring	Oxford	Non-University brickwork in Oxford city centre, Cowley and Headington

TABLE 3
THE BRITISH BRICK SOCIETY, 1971-2005

COUNTY	*AGM*	*MEETING*
Bedfordshire	1975	1973, 1993, 1996
Berkshire		1991
Bristol	1994	1990
Buckinghamshire		1996, 1999
Cambridgeshire	1998	1991, 2002
Dorset	1978	1998
Essex	1982, 1993	1988, 1989, 1994, 1998, 2000
Gloucestershire	2004	1994
Hampshire	2002, 2006	2001 (2)
Hertfordshire		1995, 1997
Kent	1983	1990, 1995
Lancashire		1994, 1995, 1997
Leicestershire	1988	2005
Lincolnshire	1995, 1999	1976, 1998
London	1974, 1977, 1991, 2000	1999, 2001, 2002 (2), 2004 (2), 2005
Norfolk	2001, 2005	
Nottinghamshire	1976	1976, 2000
Oxfordshire	1984	2004
Shropshire	1987, 2003	
Somerset	1994	
Staffordshire	1979, 1981, 1990	2003
Suffolk		1973, 1974, 1976, 1990 1992, 2002
Surrey		1981, 1986
Sussex	1996	2000 (2), 2005
Warwickshire		1997, 2002, 2003
Worcestershire	1985, 1997	1994
Yorkshire E.R.	1980, 1992	2001
Yorkshire N.R,		1996, 2004
Yorkshire W.R.		1999
York	1989	1996
Perthshire, Scotland		2005

It would be invidious to comment upon every meeting. A complete list is provided in Table 2. Highlights can be mentioned. These have included the visit to Eton College in September 1996, when no fewer than 94 people attended; the visit to the Brighton sewers in April 2000; and the meeting held at the Glyndeboure Opera House in November 2000.

In the past thirteen years, there have been sixteen visits to brickworks, of all sizes and purposes from those selling large numbers of standard-sized bricks to the mass production housebuilding industry to specialist manufacturers of special bricks. Locations of these have ranged from the south coast, at Corfe Mullen, outside Poole, Dorset, to the Firth of Tay, the Eroll Brick Company, Perthshire. In between these the society has visited brickworks in East Sussex, Kent, south Buckinghamshire, two in Essex, Bedfordshire, north Gloucestershire, north Cambridgeshire, Leicestershire, south Lincolnshire, Nottinghamshire, and the North Riding of Yorkshire. Also visits have been held at the disused kiln of the Oxford Canal Company at Fenny Compton, Warwickshire, and at the terracotta works of Shaws of Darwen in Lancashire. Visits to brickworks have always been well attended. In making up the annual programme, the visits co-ordinator attempts to include at least one brickworks visit. Brickworks were not visited in 1997, 2001 or 2004; but two were visited in four other years, whilst in 2005 no fewer than three brickworks were visited.

There have been a number of meetings visiting spectacular brick houses, many not usually open to the public. New Hall, Boreham, Essex, a house connected with King Henry VIII and now a girls school, was visited in July 1998. St Margaret's Priory, Titchfield, had featured in a television series about the history of houses and was the initial visit of a meeting in Hampshire in September 2001. A small group saw the interiors of two of the spectacular buildings within the grounds of Castle Howard, Yorkshire, in July 2004. Neither the Temple of the Four Winds nor the Mausoleum is generally open to the public. Kentwell Hall, Suffolk, is open to the public; the society enjoyed an owner's tour in April 2002. Likewise Burton Agnes Hall, East Yorkshire, has full public access; but the society was able to hold a seminar on its history in April 2001.

Most years the society aims to visit at least one country house which is not often open to the public. In the last ten years, no country house was visited in either 1996 or 2003.

Town walks have taken place in a variety of locations. In an approximate south to north listing, since 1986 these have included Poole, Dorset; Lewes, Sussex; Canterbury, Kent; Farnham, Surrey; Bristol; Reading, Berkshire; the City of London and the fringe beyond its eastern edge; Maldon and Colchester in Essex; Hatfield and St Albans in Hertfordshire; two visits to Oxford with a further visit planned; buildings of the 1930s in Luton and a more general visit to Bedford; the Shakespeare Memorial Theatre and other buildings in Stratford-upon-Avon, Warwickshire; Pershore, Worcestershire; Birmingham; both Cambridge and Ely. In the mid 1990s the major cities of Lancashire - Liverpool, Manchester, Salford, and Bolton - were visited and there have been visits to both Leeds and York and most recently the society's first excursion in Scotland includes a walk round Dundee. Other town walks have taken place following an Annual General Meeting: Cambridge and King's Lynn, Norfolk.

On several occasions multiple visits have been arranged: the two visits to the former Midland Grand Hotel, St Pancras, subsequently known as St Pancras Chambers, in November 2001 and February 2002, the four visits to Red House, Bexleyheath in February 2004, and the two visits to Lambeth Palace in August 2004 and July 2005. These multiple visits were arranged to accommodate the numbers wishing to attend in comparison with the more limited capacity of some buildings. A maximum of twelve people only can walk round Red House at any one time; Lambeth Palace is restricted to thirty. By arranging further visits the society has been able to permit members who because of other commitments could not participate in the first visit see the interior and sometimes otherwise inaccessible exteriors of buildings.

The society has yet to hold a visit in several counties. Among those with brick as a substantial component of their building materials are Derbyshire, Huntingdonshire, and Wiltshire: visits to all three counties are planned in the course of the next three years. Wales has been a major omission from the meetings programme which also the society hopes to rectify shortly.

PUBLICATIONS

British Brick Society Information has appeared regularly, three times a year since publication began. There have been a couple of years with four issues and once, several years ago, only two.

In the last fifteen years issues have varied in size from twenty single-sided pages to thirty-two or thirty-six pages printed double-sided, staple-bound with a cover. Thirty-six pages with a cover seems to represent the maximum size because of binding constraints using stapling.

There have been major changes in the publication's appearance. It is now set using a computer and printed double-sided with a cover on coloured paper. Using a computer for setting has allowed members to submit material on a disc and more recently electronically and while the editor has to translate from other software programmes to his preferred WordPerfect, this does save work.

Computer-setting has allowed the use of a more attractive font and has enhanced the appearance of the printed page by allowing the use of a justified right-hand margin, thus producing a more pleasing printed page.

Thanks are due to the many members who have contributed in the past fifteen years and special thanks are due to Terence Smith who has been guest editor on a number of occasions, thus reducing the typing imposed on the editor.

The BIAS Brunel Prize

The Bristol Archaeological Society has established a prize, known as the BIAS Brunel Prize, to encourage archaeological and other research into, and the publication of work on, the industrial archaeology of the Bristol/Bath region.

The Bristol Industrial Archaeological Society chose to devote the income from the residual funds passed on to it by the former Brunel Society to the foundation of this prize. The revenue will be subsidised, if necessary, so that an amount of £150 will be made available every two years, having been awarded for the first time in 1997.

Competition is open to BIAS members and to other persons or groups with an interest in the industrial archaeology of the Bristol region.

Entries should consist of a written report of record which should confirm to the guidance notes for *BIAS Journal*, and should not have been published elsewhere, either privately or otherwise, in whole or in part, nor submitted for another prize competition; reflect original research into and/or recording of industrial archaeological sites in the region, with source references; and be submitted by 31 August in the preceding year (*i.e.* 31 August 2006 for the 2007 competition). Entries will be considered for publication in the *BIAS Journal.*

Further details are available from Mike Bone, 'Sunnyside', Avon Close, Keynsham, Bristol BS31 2UL.

Review Article:

Medieval Brickwork in Europe, including Britain

by David H. Kennett

Extremely prompt publication of a conference, and certainly within eighteen months, is rare: *Technik des Backsteinbaus in Europa des Mittelalters*, [being *Berliner Beiträge zur Bauforschung und Denkmalpflege* **2**] edited by Barbara Perlich and Gabri von Tussenbroek[1].records the conference on Brick Techniques in Europe in the Middle Ages, held between 13 and 15 November 2003 at the Technischen Universität Berlin, at which Barbara Perlich is currently based. This reviewer first saw a copy in May 2005.

There are thirteen contributions, most of which are in German, but one is in Italian and three are in English. Those articles not in English have an English summary; those in English do not have a German summary, a sad reflection on the anticipated linguistic competence of British readers, and something which the current interpretation of the National Curriculum, at least in state schools, sadly fails to address.

The contribution by Jens Christian Holst which opens the volume examines the idea of making brick look like stone and the second one by Sabine Freyburg looks at the micro-structure of bricks depending on their firing.

Six of the articles in German are regional studies of the German-speaking lands of *Mitteleuropa* and cover north-east Germany (articles by Matthias Zahn and Barbara Perlich), the central Alpine region (Jürg Goll), Saxony and south Brandenburg (Claudia Trummer), the Prussian lands (Christofer Herrmann), the Franciscan church in Berlin (Stefan Breitling). Barbara Perlich specifically delineates regional differences between the *lander*. Three are considered: Elbe-Havel-Gebiet, Pomerania, and Mecklenburg. Mecklenburg has brick reliefs and brick capitals, in the making of which different techniques were used at different periods. Christianity reached the Prussian lands comparatively late, not much before 1240 and the earliest use of brick was in the churches dedicated to the "new religion" in an area which largely remained wedded to existing animist and other beliefs. Late brick churches have splendid stepped gables such as the parish church at Lowenstein of 1448. These are on the tower, both east and west faces, the north side of the vestry, and on the east end. The parish church at Grutta of *c.*1300 is much more plain.

Outside of the German speaking lands, there is an article on the Netherlands by Jan van der Hoeve who wrote in German. Van der Hoeve questions the large scale use of brick in Friesland and Groningen as early as the twelfth century on the basis that the 1163 dating of the church at Klaarkamp Abbey at Rinsumageest, Friesland, on the grounds that the twelfth-century dating is not supported by the evidence of dendrochronology for the timbers used in the church. Whatever may be the walling material, the roof of a church is most likely to be held up by wooden rafters, purlins and other timbers. He finds the 1163 date for the brick foundations of the abbey also not to be reliable.

The contribution in Italian by Daniela Pittaluga examines techniques of brick construction in medieval Liguria. Fabio Gabbrielli writes in English on 'Finishing Techniques for exposed brickwork in 12th- to 15th-century Tuscan architecture', and also in English, Juan Antonio Quirós Castillo discusses 'Building archaeology and social change: Medieval Tiles and bricks in Spain'. These three contributions each have extensive bibliographies and excellent and informative photographs.

British Brick Society members are more likely, however, to turn first to the final paper in the volume, that by David Andrews on 'The use and manufacture of brick in eastern England

in the Middle Ages'. The paper is based around the author's work in Essex where he has spent the last twenty years. A map defines eastern England as east and south of York and north of Sutton, Surrey, thus excluding Hampshire, Sussex and Kent. All three of these counties have at least one important early brick-built house: the bishop's palace at Bishop's Waltham in Hampshire, Herstmonceaux Castle and the Fiennes memorial chapel in the parish church there in Sussex, and Dent-de-Lyon at Margate in Kent, respectively. The Isle of Thanet appears on the map but Margate is not marked.

There is much in this survey with which one can agree but also some areas where this reviewer has a different view to the author. It is common ground that the small, white or pinkish-coloured "Flemish bricks" found in a number of Essex churches were imported. In some instances, such as the churches at Lawford and Purleigh, this was almost certainly to order: that is these bricks were fired somewhere in the greater Netherlands (possibly although not necessarily somewhere in modern Belgium) and brought across the North Sea to eastern England by a sea-going vessel as a specific order from the builders of an Essex church. At between 70,000 and 100,000 bricks, a church tower built over ten years would require only three, or at most four, deliveries of bricks per building season.

For the brick tower of the church dedicated to St Mary at Stoke-by-Neyland, Suffolk, donations were left in various wills between 1439 and 1459, leading to the suggestion that the church tower dates to the 1460s. No building accounts have survived but the alternative surmise of using money as it was given would fit with allowing the tower to settle at its own pace between building seasons, and if insufficient money was available to buy bricks for a year or two this would aid the building process by giving more time for settlement.

Fig. 1 Little Wenham, Suffolk, the hall built in 1287. Much of the structure is built of brick. The bricks are mostly pink or white in colour and are of the same size as the imported "Flemish" bricks of fourteenth-century date used in some Essex churches.

However, David Andrews' paper seems to lose interest in brick as the building material for churches after the import of Flemish bricks to Essex in the fourteenth century. He does not extend the detail of his survey of the possible importation of bricks much beyond the coast of Suffolk. The suggestion that the yellow bricks at Little Wenham Hall, Suffolk, being of the same

size as the bricks used in Essex churches, are also imported: something which is plausible but cannot be proven.

A fruitful line of research might be to explore the distribution of isolated uses of brick in the fourteenth century. In Lothingland Hundred, once all in Suffolk but now with the northern part in Norfolk, there is evidence of the use of brick before 1400 in both parish churches and a monastic undercroft. The surviving portion of the undercroft at St Olave's priory uses pinkish-red bricks for the vaults. The priory could afford to import at least one column of Purbeck marble from Dorset: the coast of the greater Netherlands is closer than Dorset, so importing bricks might have happened. In at least one nearby parish church, St Nicholas at Bradwell, the south wall of the south aisle has a hotch-potch of materials in it. These include a few red bricks but rather more of those of the white and pinkish-red varieties. Many of these bricks are large but broken fragments. The rubble wall was once covered with plaster but where this has flaked after six centuries the variety of materials used easily can be seen. The red bricks may be of local manufacture but possibly not the pinkish ones.

The closure of the discussion of brick in churches before *circa* 1420 means that later brick churches are not discussed. This is a pity as his view of St Nicholas, Chignal Smealy, Essex, would have been valuable. This is a church totally built of brick, with a brick font, dedicated in 1527.

Returning to the fourteenth century, David Andrews goes on the assert that the red bricks used in the fourteenth-century town walls and other brick buildings of Great Yarmouth and other Norfolk towns are also imported (p.144). The walls of Great Yarmouth, at least from south of the site of Market Gate, have tall brick piers, each on a large flint foundation. The brick piers carry a brick arcade with the wall-walk above. These bricks are more often red than any other colour. There is over 1½ miles of wall built in this fashion still surviving, although not all of the inner face is now visible, plus almost half a mile built in the late thirteenth century where little or no brick seems to have been used: the northern section around St Nicholas' church is almost totally of stone and flint construction. There is a long portion of the town walls incorporating the brick arcade visible to the full height under the Market Gates Shopping Centre, which had to be raised internally to accommodate the walls. Here, the full height of the walls of Great Yarmouth is *circa* 25 feet (7.625 metres). This is greater than the height of a double-decker bus. At this height, each pier and from the springers to the point of the arch on either side would require a minimum of around 2,200 bricks and whilst the walls may be of less height to the south, around 15 feet (4.575 metres); thus, at an average height of the brickwork of 20 feet (6.1 metres), to build the walls of Great Yarmouth would have required at least four million bricks and probably more. The sheer number of bricks involved suggests a flourishing local industry rather than imported sources of supply.

Within the walled town of Great Yarmouth were three friaries: the Dominicans within the walls in the area of Blackfriars Road, founded in 1271; the Franciscans, probably founded soon after 1226 but not specifically recorded until 1271, whose church, 177 ft (54 metres) long, occupied the site of the late-sixteenth-century "broad row" subsequently known as Queen Street; and the Carmelites around the site of Whitefriars' Court. Currently, no above ground remains of the Blackfriars can be seen but foundations have been recorded: the area in the early 1990s was a temporary car park. There are extensive remains of the south wall of the church of the Greyfriars with the attendant cloister and a range to the west belonging to the fourteenth century are brick-built using a red brick, albeit with some flint used in the wall make-up: a similar technique is found in the fifteenth century at Caister Castle. There is a small portion of the buildings of the Whitefriars surviving, again in red brick. Across the River Yare, at the northern edge of Gorleston-on-Sea, are the brick-built fragments remaining from the house of the Austin Friars founded in 1311.

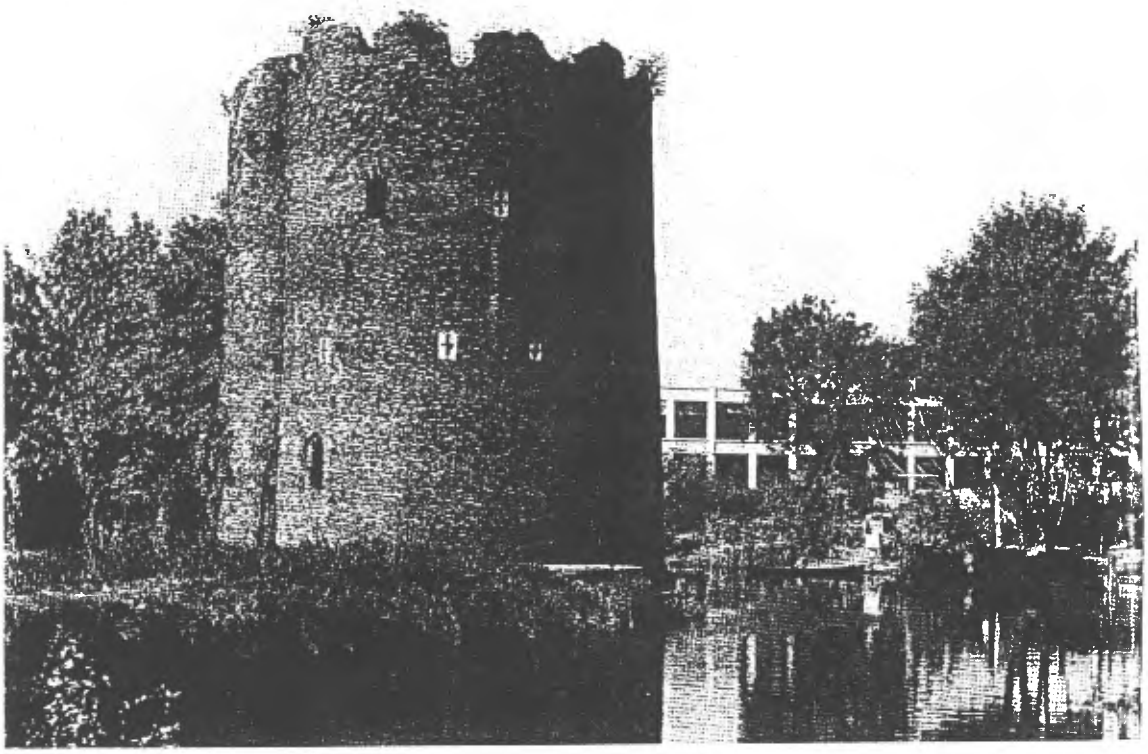


Fig. 2 The Cow Tower, Norwich, a red brick structure on the bend of the River Wensum, built between 1378 and *c.*1400 as part of the defences of the city of Norwich.

To the brick in the town walls and the three friaries in the town with another nearby may be added the known extensive undercrofts, such as the one under nos.50-56 Howard Street South and that under Fastolf House, Regent Road. The quantity of fourteenth- and early-fifteenth-century brick in Great Yarmouth suggests readily available supplies of good quality *red* brick: imported Flemish bricks in Essex are off-white in colour. In Great Yarmouth demand and use was high in prestige projects, both town walls and religious houses, and that demand would only have been able to be met *locally*.

The parish church of St Andrew, Gorleston, has octagonal brick columns in the arcades and, one suspects, that the flint-faced church is structurally of brick. The bricks used in the arcade columns are red bricks.

In Norwich, the Cow Tower is an isolated *red* brick tower on the bend of the River Wensum. Better than any photograph, John Thirtle's large watercolour painting of *c.*1812, *Boatbuilder's Yard near the Cow Tower Norwich,* demonstrates its imposing bulk and the building's presence.[2] Built between 1378, when the city purchased the land, and *c.*1400, there are some surviving accounts, but those of 1398/99 do not represent the totality of the bricks used in the tower. The accounts point to five different local suppliers, itself significant as to the scale of the demand for bricks in the city. One explanation for the use of five suppliers for the small number of bricks, a mere 36,850 recorded in the surviving accounts in 1398/99, is that the civic authorities wished to patronise all the established brickmakers in the city. Another reason could be that by using a range of suppliers, the builders were not dependent on a single entrepreneur and equally no one supplier was committed to sell a major part of his production to a large project thereby jeopodizing relationships with other customers. Both of these suggestions seem far more plausible than the idea that the building accounts for the Cow Tower indicates that the industry in the city was only small scale.

The same conclusion about the scale of the brick in the town is evident from the quantity of bricks used in the now demolished town walls at Kingston-upon-Hull, together with Holy Trinity church in the town centre. Excavations in the 1980s revealed wall foundations of brick at least 5 ft wide. It cannot be argued that these point *only* to a small-scale local industry (p.144). This industry was sufficiently well-established to be the probable source of the bricks from Sir Andrew Ogard's manor house at Emneth, Norfolk: Emneth is adjacent to Wisbech and a sea journey from "beyond Lincolnshire" via the town of Lynn Episcopi (modern King's Lynn), which was the mouth of both the River Great Ouse and the River Nene until the draining of the Fens in the seventeenth century and later.

The second point where issue may be joined concerns the statement "Many of our oldest brick buildings have not survived" (p.146). One can first ask how many brick houses were constructed in the fifteenth century: due to the expensiveness of brick this probably not that many more than those for which we currently have evidence, even if the house has been totally demolished as was Fulbrooke Castle, Warks. This quadrangular house was recorded in 1478 ruinous and probably had been a decade earlier. In the 1480s, Edmund Compton (died 1493) began building a new house at Compton Wynyates. The Comptons had been there for two centuries already. Either then or when his son, Sir William Compton (1482-1528), the bricks from Fulbrooke were reused. The son is the more probable as he was the keeper of Fulbrooke Castle. The roof timbers for the hall were also transferred from the older house to be reused at Compton Wynyates. as was. stone from Fulbrooke which was reused as the basis of the bay window of the hall. Clearly Compton and his stonemason and other workers were not averse to recycling building materials.[3]

The rarity of brick in the late fifteenth and early sixteenth centuries is clearly demonstrated by these events.

Through the survival of the rolls of the 1436 Income Tax, we know the names and, more significantly, the incomes of most, if perhaps not quite all, of the two hundred richest men and women in England. Sir Roger Fiennes at the brick-built Herstmonceaux Castle, Sussex, is a rare exception as to his income: the roll for Sussex does not survive. There are others whose names do not appear in surviving documents. Lord Bardolf at Dennington, Suffolk (died 1441), and Sir John Say at Broxbourne, Herts. (died 1473), spring to mind as men who could afford to construct an elaborate stone-built chapel at their respective parish churches but whose house is completely lost, the former, in fact, appears to be unrecorded in the Hearth Tax for Suffolk of 1664. Other fifteenth-century brick houses which I can think of as completely lost are Hawstead, Suffolk, a house of 35 hearths belonging to the Drury family, and the house of Sir Thomas Hoo, later Lord Hoo of Hastings, at Luton Hoo, part of which survived to be sketched at the end of the eighteenth century. It had been extensively remodelled by a new owner, Sir Robert Napier, at the beginning of the seventeenth century. The fifteenth-century gatehouse and the various seventeenth-century buildings were not swept away until after the completion of the new house which Lord Bute commissioned from Robert Adam. This began construction in the 1760s but there are diary references from visitors recording an odd mix of old and new as late as 1774.

If the evidence from the 1436 Income Tax is insufficient to convince a researcher of the relatively small number of brick houses in the fifteenth century, and, indeed in the early sixteenth century, because not all counties have a surviving roll from the 1436 Income Tax, the Hearth Tax levied from 1662 to 1689 has at least one roll per county surviving in a reasonable condition to allow work on it to be done. It may be laborious to transcribe the names and number of hearths of the largest houses but every house in England was recorded and comparison between the tax record and extant and known but demolished houses can be made. Moreover, an edition of a Hearth Tax is in print for at least thirteen individual counties[4] and individual hundreds from three more.[5] The more recent topographical volumes of the *Victoria*

County History of England contain analyses of the Hearth Tax from which the large houses can be extracted and other listings can be found in works dealing with aspects of aristocratic and gentry life.[6] Microfiche or microfilm of the Hearth Tax for an individual county is usually available in the county record office where nothing is published.[7] The originals are in the Public Record Office at Kew and work under the auspices of Roehampton University is in hand to provide a total publication of this important series of documents. Clearly it is possible that an early attempt to compare the tax with surviving houses will have more omissions than the researcher would like: the work on 'Suffolk Houses in 1674' included in this journal over twenty years ago is a case in point.[8]

We all write from within our own perspectives: this reviewer's stem from linking buildings with tax documents and geographically from residence in Bedfordshire, later on the Norfolk/Suffolk border and now in south Warwickshire, respectively within 5 miles of each of Someries Castle, Caister Castle and now Compton Wynyates. It is very different from spending twenty years in one county, Essex. There is one thing all are agreed upon: brick was expensive: a material affordable only by the very wealthiest of men and corporations at least until mechanisation and mass production. As the volume as a whole shows, this is the case from the Guadalquiver to beyond the Vistula..

NOTES

1. Barbara Perlich and Gabri von Tussenbroek [eds.], *Technik des Backsteinbaus in Europa des Mittelalters*, [being *Berliner Beiträge zur Bauforschung und Denkmalpflege* **2**] 154 pages, 108 illustrations. Petersberg, Germany: Michael Imhof Verlag, 2005. ISBN 3-937251-99-5, price € unknown; £35-00 plus p. & p. (Available from Buckland Books, Holly Tree House, 18 Woodlands Road, Littlehampton, West Sussex BN17 5PP)

2. Norwich Castle Museum. For a reproduction see A. Hemingway, *The Norwich School of Painters 1803-1833*. Oxford: Phiadon, 1979, pl.26 with brief discussion pp.34-35.

3. The fullest account of Compton Wynyates is in G. Tyack, *Warwickshire Country Houses*,. Chichester: Phillimore, 1994, 71-76, with pls.51-54 and colour pl. III.

4. From south to north counties with a complete or relatively complete Hearth Tax in print are Devon, Somerset, Dorset, Hampshire, Surrey, Oxfordshire, Bedfordshire, Suffolk, Norfolk, Shropshire, Staffordshire, Derbyshire, and Nottinghamshire. Space considerations forbid full references.

5. Hearth Taxes in print for part of county are Faversham Hundred in Kent; in Warwickshire the two northern hundreds: and Salford Hundred, Lancashire. But note for Salford Hundred, the smaller houses, those with one or two hearths, and those persons exempt the tax because of poverty are omitted in the published version.

6. Hearth Tax listing can be found in the later topographical volumes published for Cambridgeshire. In *An Open Elite?*. Lawrence Stone and Jeanne Fawtier Stone provide a list of the Hearth Tax record of the largest houses in Hertfordshire and Northamptonshire.

7. Counties with early brick houses for which no Hearth Tax is in print or has been studied and the results published are Kent (other than Faversham Hundred), Sussex, Buckinghamshire, Middlesex, Essex, Huntingdonshire, Leicestershire, Lincolnshire, and Yorkshire.

8. D.H. Kennett, 'Suffolk Houses in 1674', *BBS Information*, **37**, 1985, 4-11. It suffers from inadequate use of H.A. Copinger, *The Manors of Suffolk*. and more significantly Robert Suckling's two volumes of his projected multi-volume *History of Suffolk*, which includes several engravings of houses which have now been demolished. Unfortunately Suckling only covered Suffolk north-east of the River Blyth.

MATHEMATICAL TILES IN THE WEST

Lawrance Hurst

The proceedings of the Ewell Symposium, held in 1981,[1] includes papers on mathematical tiles (brick tiles) from a number of counties, but none to the west of Wiltshire, so it was a surprise to find a country house in Tavistock, Devon, faced with them. This is the main part of the building now housing Mount House School, sited on the side of a hill in a commanding position overlooking the town, dating from 1786 and originally known as Mount Tavy.

Mount Tavy was built in 1786 by John Phillipps Carpenter for his own residence, on land purchased from the Duke of Bedford. He and his family lived there for about a hundred years when it was sold to Daniel Radford, who made extensive alterations and extended it to the rear, although he only lived there until 1900. Mount Tavy then passed through a number of hands until in 1940 it was acquired by John Wedd, who brought his prep school (called Mount House) from Plymouth to occupy the estate, This action was prompted by enemy bombing in Plymouth, and the need to evacuate his pupils to a safe environment.

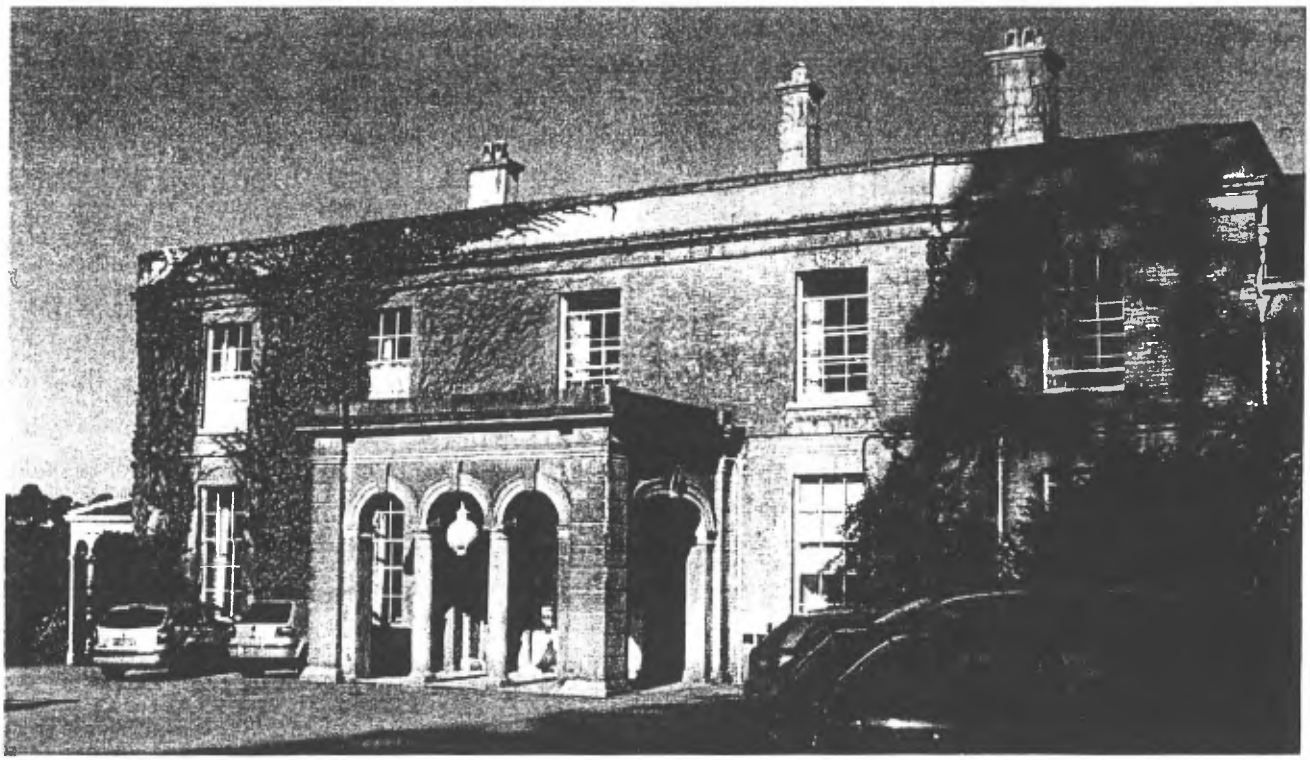


Fig. 1 Mount House School (Mount Tavy): the Entrance Elevation

Original parts of the main house are faced with cream-coloured mathematical tiles, including quoin tiles at the window reveals and arch tiles over the openings. The entrance elevation (fig. 1) was extended by Daniel Radford using tiles presumably salvaged from demolished or no longer external parts of the original house, as it has ingeniously alternate cut tiles to form the window reveals (fig. 2), but stretchers over the openings, behind which can be seen a concrete lintel (fig. 3).

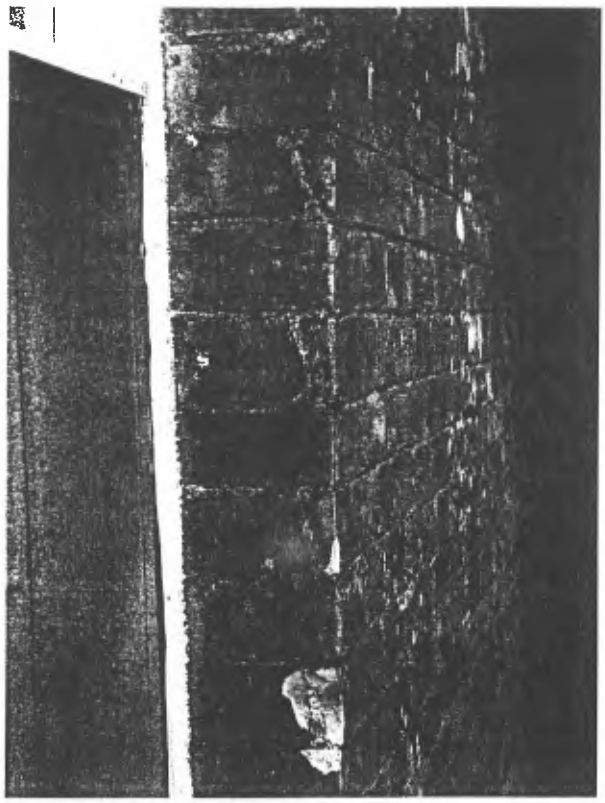


Fig. 2 Window reveal of extension using alternately cut salvaged tiles.

It is interesting to speculate why mathematical tiles were used to weather this house, and I suggest that "weather" is the operative word. In the final quarter of the eighteenth century, houses in the region were mostly built of a hard, slate-type stone, bedded horizontally in lime mortar. Those that were required to be dry were weathered with slates, hung either on battens or perhaps direct on the stone walls. It is surmised that Mount Tavy was of similar construction, but weathered with mathematical tiles to give the appearance of brick, which would no doubt have been more desirable than slate, but less costly than the alternative - wrought stone.

Hugh Meller, who is writing on houses in the West Country,[2] tells me that elsewhere in Devon he has found mathematical tiles at Nutwell Court, Lympstone (white); Red House, Bridgeland Street, Bideford (red); and Law Chambers, Silver Street and Victoria House, Castle Street, both in Axminster (both buff). The late Tony Law, formerly headmaster of Mount House School, said the George Lopes, the owner of Gnaton Hall, at Yealmpton, near Plymouth, had told him that the external walls of his house at faced with mathematical tiles, but I have been unable to confirm this.

Mathematical tiles were used towards the end of the eighteenth century by leading architects on a number of country houses, sometimes to weather and weatherproof brickwork ab initio such as at Belmont. in an exposed location near Faversham in Kent (Samuel Wyatt in 1792),[3] or to conceal alterations, such as at Althrop, Northants.,[4] where the house was brought up to date by Henry Holland in 1787, by concealing the old red brickwork and alterations being the then fashionable cream-coloured 'bricks'. Mathematical tiles can also be found, generally facing timber-framed construction, in towns in Kent,[5] Greater London, Surrey, Sussex, Hampshire, and Wiltshire, with a few elsewhere, but none has hitherto been reported further west than Wiltshire.

The puzzle is therefore why there are these examples in Devon, and from whence these

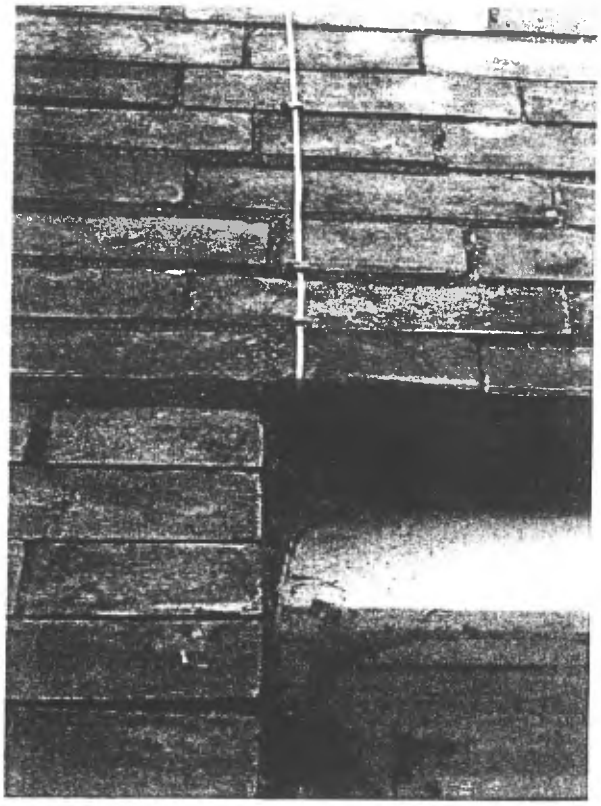


Fig. 3 Stretcher bond head of window in extension

mathematical tiles came, and indeed if they were by architects who had used mathematical tiles elsewhere.

REFERENCES AND NOTES .

1. [M. Exwood (editor)], *Mathematical Tiles: notes of Ewell Symposium 14 November 1981.* Vernacular Architecture Group, 1981. Reference is made to county surveys in this, only if there is more recent published work. To Exwood (ed.), 1981, may be added subsequent work by the late Maurice Exwood: M. Exwood, 'More on Mathematical Tiles', *BBS Information,* **37,** November 1985, 16-18, with a more up-date analysis of the numbers by county accompanied by maps in M. Exwood, 'Mathematical Tiles - the latest count', *BBS Information,* **41,** February 1987, 11-13.

2 H. Meller, personal communication.

3. M. Exwood, 'Mathematical Tiles, Great Houses and Great Architects', in Exwood, (ed.), 1981, 26-30, esp 29, citing Christopher Hussey in *Country Life.* 3 February 1955.

4. Exwood, 1981, 29; D.H. Kennett, 'Mathematical Tiles and the Great House: height and proportion', *BBS Information,* **34,** November 1984, 12-14; see also Exwood, 1985.

5. T.P. Smith, 'Brick Tiles in East Kent: an Interim Report', in Exwood (ed.), 1981, 2-7, with T.P. Smith, *Brick Tiles (Mathematical Tiles) in the Faversham Area.* Faversham: Faversham Society, 1985.

Education in Bricklaying
Apprenticeship and College-based Learning

John Joseph M.G.B.
Bricklaying Lecturer

In the past, the main training available for budding bricklayers' was the traditional apprenticeship that was aimed at 16-18 year olds. This differs substantially from the college-based City & Guilds, NVQ, and SVQ qualifications, in as much that, 'site based' training allowed the students to learn other building skills such as carpentry, plumbing, and electrical installation.

These additional skills undoubtedly give the students a better grounding into general building as opposed to specialising in bricklaying.

Specific college-based courses, apart from teaching the students the practical skills needed to be a good bricklayer, also allow them to be taught the theory behind the skill. A twisted pier for example is an extremely easy task for a bricklayer to build; understanding the theory behind it, is far more difficult. Such piers look great supporting a gabled roof structure at the head of a driveway but can be made to look terrible if the top plinth is not aligned with the base. So, whereas an apprentice-trained bricklayer will probably know how to fashion an appropriate gauge piece to produce the pier, the college-trained student will also understand the theory as well as the practical knowledge required to ensure symmetry.

College-based courses are becoming far more readily available at Adult Colleges as well as the main-stream Technical College (or College of Further Education as these are now more usually known). Open College Network (OCN) accredited courses are run in parallel to the more recognised C&G and NVQ Courses and are aimed at attracting the more 'mature' student who may feel out of place attending on a large college campus.

The courses that I teach attract a wide age range (16 – 76 years), and of both genders. Hence the adage that "You're never too old to learn", most definitely applies.

Further training can cover the restoration of older brickwork using lime mortars and putties. These courses give a fascinating in-sight to the period Bricklayer who would not have had the benefit of college-based training and would have relied entirely on 'hands on' experience as an apprentice bricklayer.

Many of these period bricklayers would undoubtedly have been Masters' of their craft, utilising many of the skills used by stone masons of the time and would not have had the power tools used for brick cutting, that are widely used today.

DATING SCALES FOR RUSSIAN HISTORIC MASONRY AND BRICKS

Igor Kiselev

THE PROBLEM OF DATING BRICKS

One of the most important tasks in research prior to the restoration of the old buildings is their date and that of various alterations. This applies to all regions with a deep cultural and social history, where an ancient building can have up to ten or more reconstructions.

The history of brick production and brick laying tradition is critical to historic buildings investigators. It is especially important for the archaeologists and architectural historians. Masonry and its different parameters provide multiple opportunities for research in determining the age of historic buildings and their parts. Clues hidden in brick walls allow architects and researchers determine not only dates of old buildings but shapes and sizes of missing details. This is especially helpful in Russia, where many archives were destroyed during World War II.

MASONRY DATING SCALES

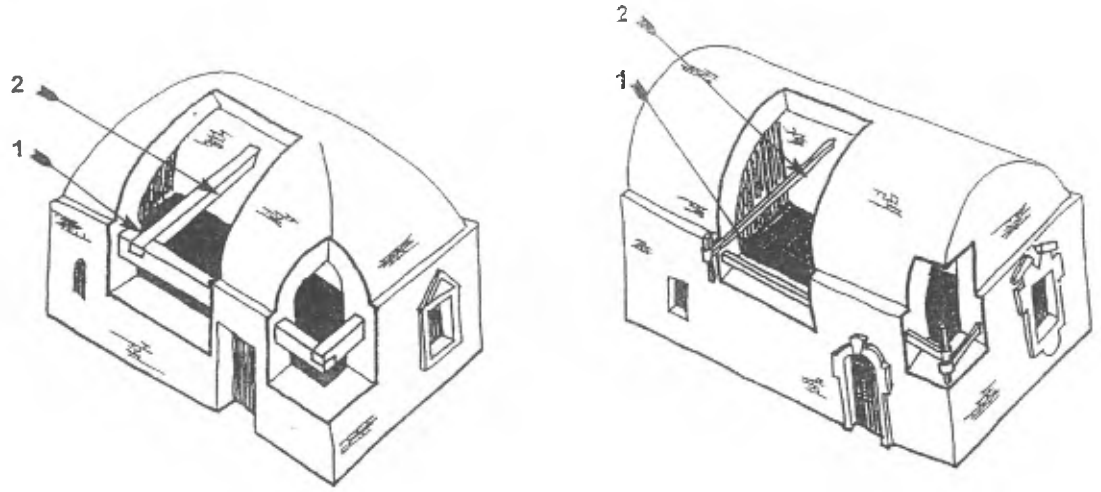
Masonry dating scales, which have been developed to support research work, include such elements as brick sizes, types of bonds and joints, trademarks. As practice has shown, these scales can bring rather precise results, with an accuracy varying from one to twenty years. In most cases the latter is enough, especially for the buildings of the seventeenth century and older. It is important to remember that dating scales work well only in complex analyses. All scales must be checked and controlled against each other. Of course, it is impossible to create universal scales for an entire country as expansive as Russia. Therefore they are local. Moscow, the biggest and one of the oldest cities in the country, has the most elaborate masonry dating scales. The history of brick buildings in Russia dates from the end of the first millennium AD, which roughly co-incident with adoption of Christianity.

WALL THICKNESS

First of all, preservation researchers should pay attention to the thickness of the brick walls.

Vaults were the main type of the ceiling before the eighteenth century. Their types and sizes often determine the wall thickness. Vaults not only have significant weight, but impose horizontal thrust on the walls. To resist these forces, walls in the old buildings were built exceedingly thick. The larger the interior spaces covered by the vaults, the thicker the walls tend to be. In addition to the wall thickness the thrust was neutralized by ties, which could be installed either inside of the walls or left opened in interiors spanning from one wall to another. At first ties were mainly made of oak. Wooden ties (fig. 1a) exposed to the influence of weather elements were subject to deterioration and often were the reason for destruction of buildings erected before the seventeenth century. In the seventeenth century and later more reliable iron ties were used in masonry construction (fig. 1b). In dry conditions they can work for a practically unlimited length of time.

From the eighteenth century through to the twentieth century the thickness of the brick walls in buildings with wooden ceilings was determined mainly by the insulation requirements.



a b

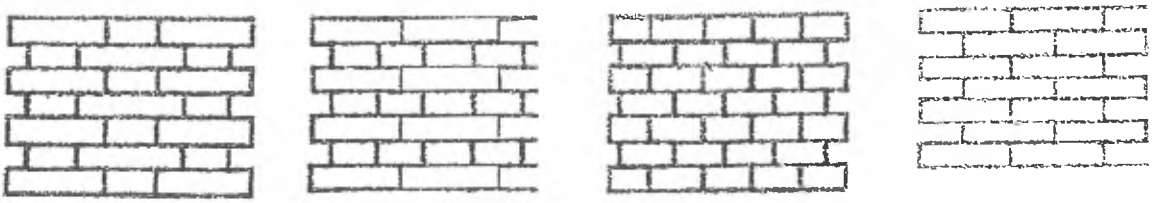
Fig. 1a (left) Wooden ties (before the seventeenth century).
Fig. 1b. (right) Iron ties (after the seventeenth century).
on both illustrations:
1. wall tie.
2. interior tie.

In central Russia freezing happens even with a thickness of two-and-a-half stretcher lengths of a standard brick (around 25 inches). Hence there is a minimum practical thickness of a brick wall.

BRICK BONDS

One of the basic dating parameters of masonry is the type of bond used. In the sixteenth, seventeenth, eighteenth, and early nineteenth centuries Flemish bond (fig. 2a) was most commonly used throughout Russia. In the second half of the nineteenth century and first half of the twentieth century this was replaced by English bond (fig. 2b). In the second half of the twentieth century masons began using Common bond, which was also called American bond in Russia. Header bond was used in Russia in the seventeenth to nineteenth centuries in buildings or small portions which are circular in plan, for instance in church altars (fig. 2c). From the early nineteenth century this bond type became widely used around the country for a regular masonry. Running bond, akin to stretcher bond, with wall thickness of half of a stretcher was used in low outbuildings (fig. 2d).

One of the most reliable dating parameters of masonry is the form of the joint. In the tenth to thirteenth centuries a weathered joint was the most typical in different parts of European Russia (fig. 3b). In masonry of the sixteenth and seventeenth centuries, this was replaced by the flash joint (fig. 3a). No plaster was applied to the interior and exterior walls at that time and flash joints yielded brick walls of smooth appearance. In the eighteenth and early nineteenth centuries the weathered joint returned and became the most popular type of joint for almost one hundred years. In the second half of the nineteenth century plain cut joint (fig. 3c) became the most typical together with a new mortar ingredient: Portland cement. This type of joint is used in Russian masonry construction at the present. Several new joint types came into existence at the turn of the twentieth century. They were made with special tools and have a number of shape options. Masonry with such figurative joints was not plastered and was left exposed.



a b c d

Fig. 2 Brick bonds in use in Russia

Fig. 2a. Flemish Bond: in Russia: before the mid nineteenth century.
Fig. 2b English Bond: in Russia: after the mid nineteenth century.
Fig. 2c Header Bond: in Russia: nineteenth century.
Fig. 2d Running Bond, with 5 inch wall thickness: in Russia: nineteenth century.

a b c d

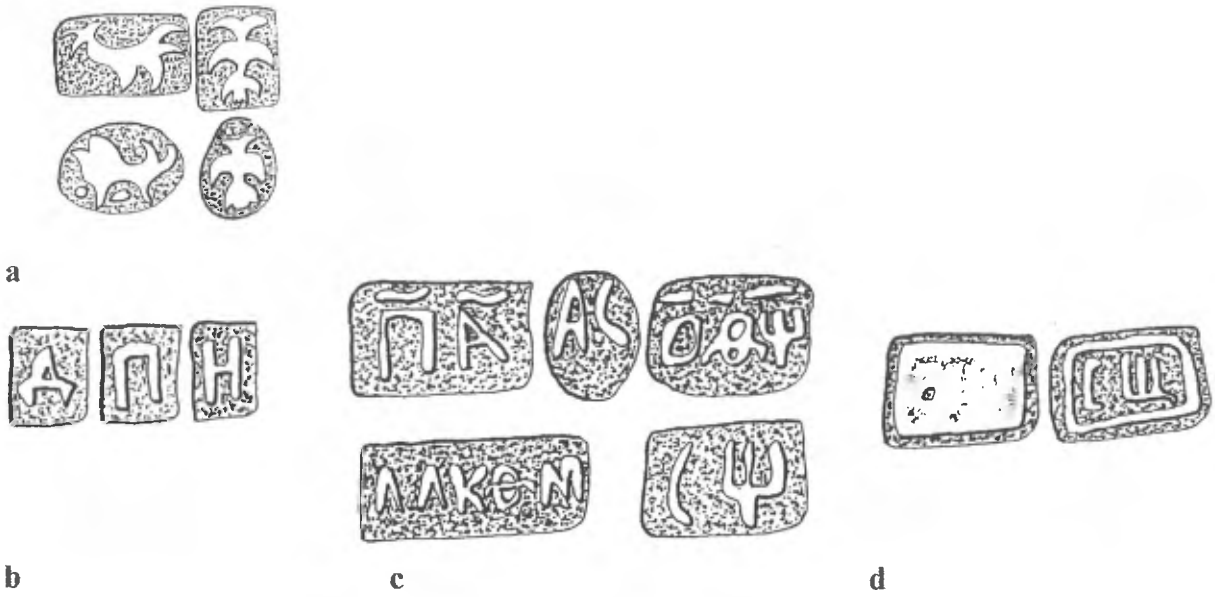
Fig. 3 Joints in use in Russia

Fig. 3a Flash joint: sixteenth and seventeenth centuries.
Fig. 3b Weathered joint: eighteenth and first half of the nineteenth centuries.
Fig. 3c Plain cut joint: after the mid nineteenth century.
Fig. 3d Types of joints in twelfth century buildings.

BRICK SIZES

Brick sizes had different standards at different times. During the sixteenth and seventeenth centuries, typical bricks were oversized with average dimensions of 12 in x 6 in x 3 in. The brick was soft. It was easy to cut allowing bricks to be shaped into various decorative forms. In the eighteenth century through to the beginning of the nineteenth century brick sizes gradually diminished. From the mid nineteenth century, bricks measured 10 in. x 5 in. x 2.5 in., which remains the standard size today.

Brickmakers often produced bricks in sizes smaller that those established by the state legislation in order to save materials, labour and energy consumption. This lack of observance of standardized brick sizes hampered considerably the accuracy of estimates and resulted in higher construction costs. Therefore, in the middle of the seventeenth century a special government edict was handed down. According to this edict each factory had to place its own trademark on the surface of its bricks. If the sizes of the bricks in an erected building did not correspond to the established ones, the brickmaker was recognized by his trademark and punished (they were beaten with cudgels).



a

b c d

Fig. 4a Animal-shaped stamps: third quarter of the seventeenth century.
Fig. 4b. Stamps on headers: late seventeenth century.
Fig. 4c. Stamps on headers: eighteenth century.
Fig. 4d. Stamps on headers: nineteenth century.

BRICKMARKS

Today the history of Russian brick trademarks covers about three and a half centuries, which gives a valuable insight into the history of the brick factories of Russia. Some of them existed no longer than one year, some of them survived for a number of decades. The first known brick trademarks are found on bricks produced by the state factories in the third quarter of the seventeenth century. They usually have animal-shaped forms and represent stylized eagle or unicorn (fig. 4a). Trademarks from the late seventeenth century through to the nineteenth century were usually abbreviated letters typically made up of the initials of an owner or partners. (figs. 4b, 4c, 4d). In the second half of the nineteenth century, the quality of a brick production significantly improved with the increase in competition between manufacturers. Government control over the factories became obsolete. However, owners continued stamping bricks forprestige and advertising. As a result, brick trademarks ceased to be abbreviations and began using full name of an owner or a company.

Brick stamps belonging to the seventeenth century were located on the headers (fig. 4b), a practice which continued through to the first half of the nineteenth century (figs. 4c, 4d). Twenty-five percent of all bricks produced had to be stamped according to the law. In the second half of the nineteenth century and the early twentieth century trademarks were placed on a brick stretcher and/or the bed face to fit the entire name of the owner or the company, which required much more space than a header was able to provide (fig. 5).

Machine-made brick production begins in the 1830s. The appearance of machine-made bricks differs from that of hand-made bricks. At first, in the 1830s and 1840s, the difference was not that noticeable and required a certain level of experience to determine the type of brick production. Gradually, it became much easier to tell a machine-made brick from a hand-made one.

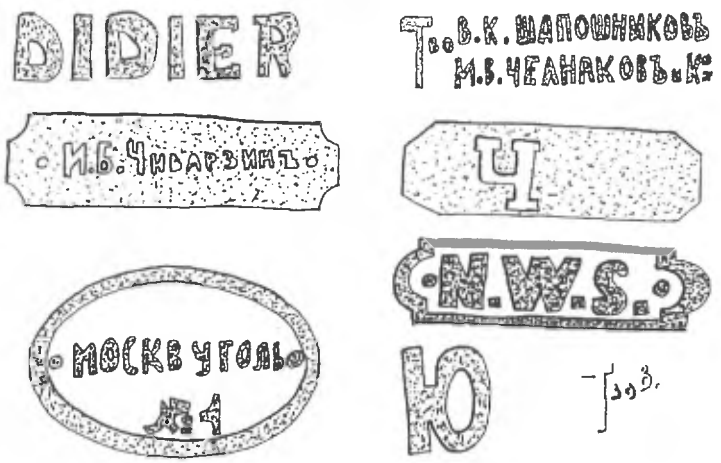


Fig. 5. Stamps on stretchers, also used on bags
(second half of the nineteenth century and twentieth century).

A GUIDE TO DATING

Studying all the types and parameters of a particular brick masonry is extremely important in order to develop the restoration design. If profiled parts of the brick are missing and have to be restored, one of the most important tasks is to determine the size of the lost part, which often projected out from the wall's surface. Before the twentieth century, specialists had many discussions on the topic of restoring the lost portions of the brick, but no one was able to suggest a plausible method of determining this: projected parts of the bricks were different in each case. At the beginning of the twentieth century, it was discovered that profiled details were cut on the full stretcher length of the brick. It means that if the average length of brick is known and the non-projected part of brick remains in the masonry, the size of the missing projected part can be determined by simple subtraction. All the twentieth-century restorations in Russia have been based on this methodology. Missing decorative details can be calculated and reconstructed with near absolute precision, which is especially important in the absence of drawings or any other historic documents. The same methodology can be used to determine location and thickness of the missing walls, configuration and sizes of doorways and window openings.

Studies have shown that on average a quarter of all masonry contains second-hand bricks, which were often reused from old demolished buildings. It means that if masonry dating is based only on a brick itself with no regard to the other masonry elements, mistakes can be made in at least a quarter of all cases. Only complex dating using all masonry parameters can give us reliable results.

INTRODUCTORY BIBLIOGRAPHY TO RUSSIAN BRICK:

Kiselev, Igor, *Chronological scales for the Moscow masonries of the 16th –19th centuries.* Moscow, Rosrestavratsia, 1986, 1990, 1997 (three editions).

Kiselev, Igor, *Architectural details in Russia during the 18th-19th centuries.* Moscow, "Academia", 2005. Reference book for historic preservation

Brick for a Day: Oxford beyond the University

The British Brick Society held one meeting in Spring 2006, a visit to Oxford on Saturday 1 April 2006, primarily looking at brick buildings not connected with the University of Oxford. The city is a thriving commercial and industrial centre with a wide range of brick buildings for a variety of retail, office, leisure and religious uses.

The morning concentrated on commercial buildings. Noteworthy are: in Park End Street, the premises designed by Herbert Quinton in 1903 for Frank Cooper's Oxford Marmalade, and those on New Road, including Carfax Depository of 1892, from which both the original office fittings and glazing survive. On the south side of George Street are a red-brick former three-storey clothing factory of 1892, with a two-storey extension of 1929 and one of the few brick buildings for Burtons, the tailors, now in other uses.

George Street is a major shopping, eating and entertainment area. There are a cinema and a two theatres, all built in the 1930s. The Odeon Cinema of 1936 was built as an ABC cinema at the west end of George Street and the Apollo Theatre of 1933 is at its east end. The brickwork of Edward Maufe's Oxford Playhouse of 1938, whose façade on Beaumont Street occupies eighteenth-century stone-fronted houses can be seen from the adjacent Gloucester Green. The Apollo and the cinema are red brick; Oxford Playhouse is buff brick but a recent (2004) addition is in deep red brick.

A contrast is the yellow brick of the Randolph Hotel by William Wilkinson of 1863-66. The same yellow/white brick is used for buildings in on High Street, including Coutts Bank, and King Edward Street. The new building for Oxford Crown Courts was built in dark brown brick, behind the converted showroom of Morris Motors of 1932. Oxford's principal police station is opposite on St Aldgates.

The visit to Cowley concentrated on religious buildings. There is a new mosque in bright red brick with yellow brick trim. Cowley has several current and former religious buildings. The former St Luke's church of 1937-38 by H.S. Rogers uses in yellow-buff-coloured brick, now converted to be Oxfordshire Records Office with the addition of outer, glass-covered, "aisles". The very active United Reformed church of 1929-30 by George Smith was constructed of brown brick whilst a building now used by an Evangelical Christian group, a long narrow structure in red and yellow brick. The former Salesian College with the adjacent St Joseph's church, designed by William Wilkinson in 1880, with additions by Wilkinson and his nephew, H.W. Moore, of five years later. These buildings are now converted into flats. In Temple Cowley also is the yellow brick public library opened in 1940 which retains its curving fenestration and original internal fittings.

In Headington are small branch banks. The Barclays branch of *c.*1930 uses regular-sized bricks as opposed to the narrow bricks employed on buildings for the same bank at Harpenden, Herts., and Gorleston-on-Sea, Norfolk. Like its contemporaries, the brick colour, while generally red varies to include several darker shades, including some which are purple. The meeting concluded with a visit to see the outside of Headington Hill Hall, designed by John Thomas for the brewer James Morrell in 1856-58. Thomas' earlier work includes Somerleyton Hall, Suffolk, for the railway engineer Morton Peto.

DHK

Brick Queries

From time to time, the British Brick Society receives enquiries about bricks, brickmaking, other ceramic building materials, and brick buildings. These are printed when space is available in *British Brick Society Information.* Responses are also included when these are forthcoming. Most of the present group have been sent to the Hon. Enquiries Secretary, Michael Hammett.

DHK

AN UNKNOWN BRICK HOUSE

The British Brick Society may have members who could help to identify the house and estate shown in figures 1 and 2 from an overmantel painted *circa* 1700. From the style of the building a date for the house of about twenty-five years earlier, *i.e. c.*1675 seems probable.

The identity of this house has eluded researchers for years including some of the most experienced architectural historians. It is not even certain whether the house was constructed of brick, although the light orange-buff colour used to indicate the wall colouring might be highly indicative of brick. Similarly the same colour is used for the walls enclosing gardens and orchards.

The Geological Society has suggested that the house may be in one of Kent, Cheshire, Shropshire or Cumbria.

Can any members of the British Brick Society help with an identification.

LUCY DENTON

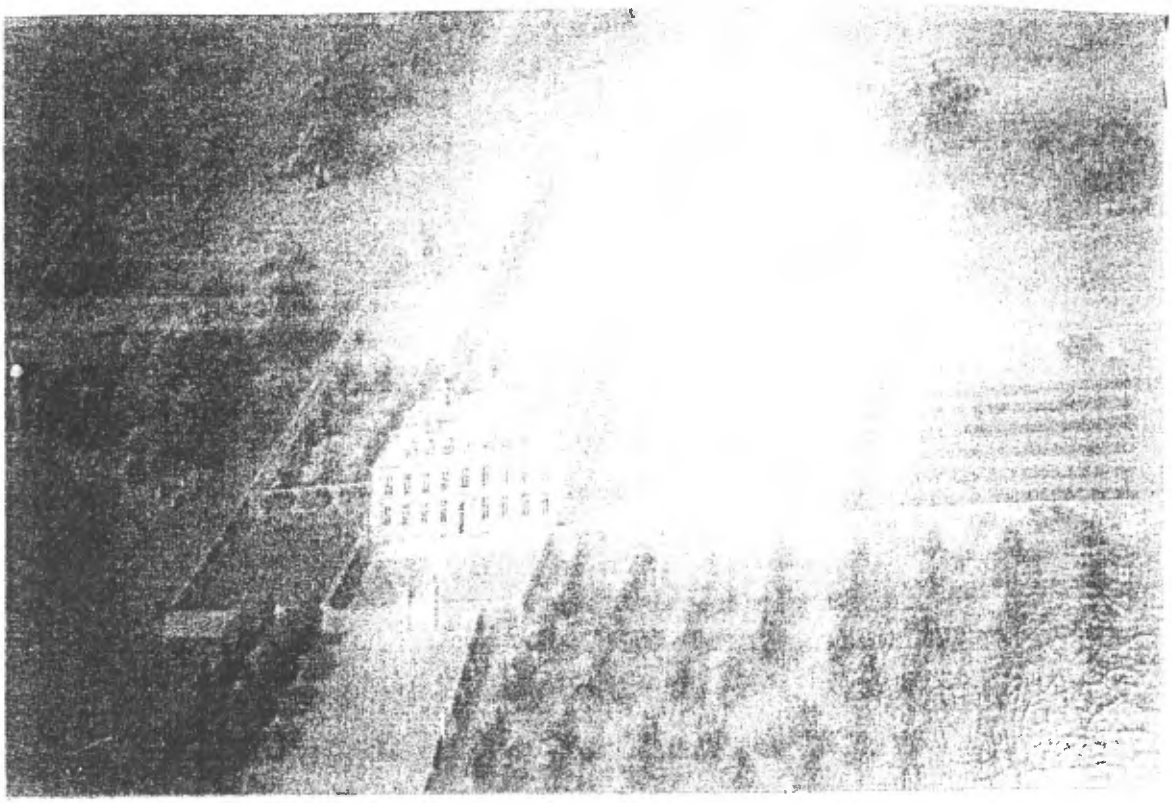


Fig. 1 Overmantel showing an unknown country house. It is assumed that the orange colour of the original represents the use brick.

Two possible responses have been offered:

Since August 2005, various people have looked at this overmantel. Andor Gomme believes that the house is Stapleford Park in Leicestershire.

FRANK KELSALL

There are a number of technical reasons why this writer thinks Stapleford Park may not be a correct attribution for the house shown in the overmantel. These reasons will be set out in a future issue of *British Brick Society Information.*

An alternative suggestion for the identification of this house may be offered, which is to follow up the Geological Society's possible identification with Kent.

In the decades either side of the English Civil War and partly encompassing the period of the war, a number of *brick* houses with hipped roofs including hipped dormers were built in Kent. Bridge Place, Bridge, on the road from Dover to Canterbury, was built for Sir Arthur Braems. Sir Arthur purchased the estate in 1638; in 1661, the was drawn by Willem Schellinks. The drawing now in the National Library, Vienna (not seen by the writer) shows a house nine bays by seven, which has been reduced to five bays on the north front with an inserted central door and four bays on the east front. It was reduced after a change of ownership in 1704. There are oblong chimney stacks. There are cross-casement windows on the north front. Bridge Place is brick with brick pilasters.

Hall Place, Bexley, is another brick house in Kent of two storeys with a hipped roof and hipped dormers. This has sixteenth-century origins but was remodelled in the early 1650s. It lacks pilasters. In the same tradition is Lees Court, thirteen bays long, with a completion date of either 1652 or 1655. Lees Court lacks dormers.

Broome Park, near Barham, Kent, was built between 1635 and 1638 in rose-red brick in English bond but using shaped gables for the attic storey, very much like Lady Abigail's Range in stone at Stapleford Park. Also of the 1630s is Chevening Park, reputed to date to before 1630 but heavily remodelled after 1715. The house extant in 1679, from which year a drawing is extant, is two-and-a half storeys on a semi-basement with a hipped roof and hipped dormers.

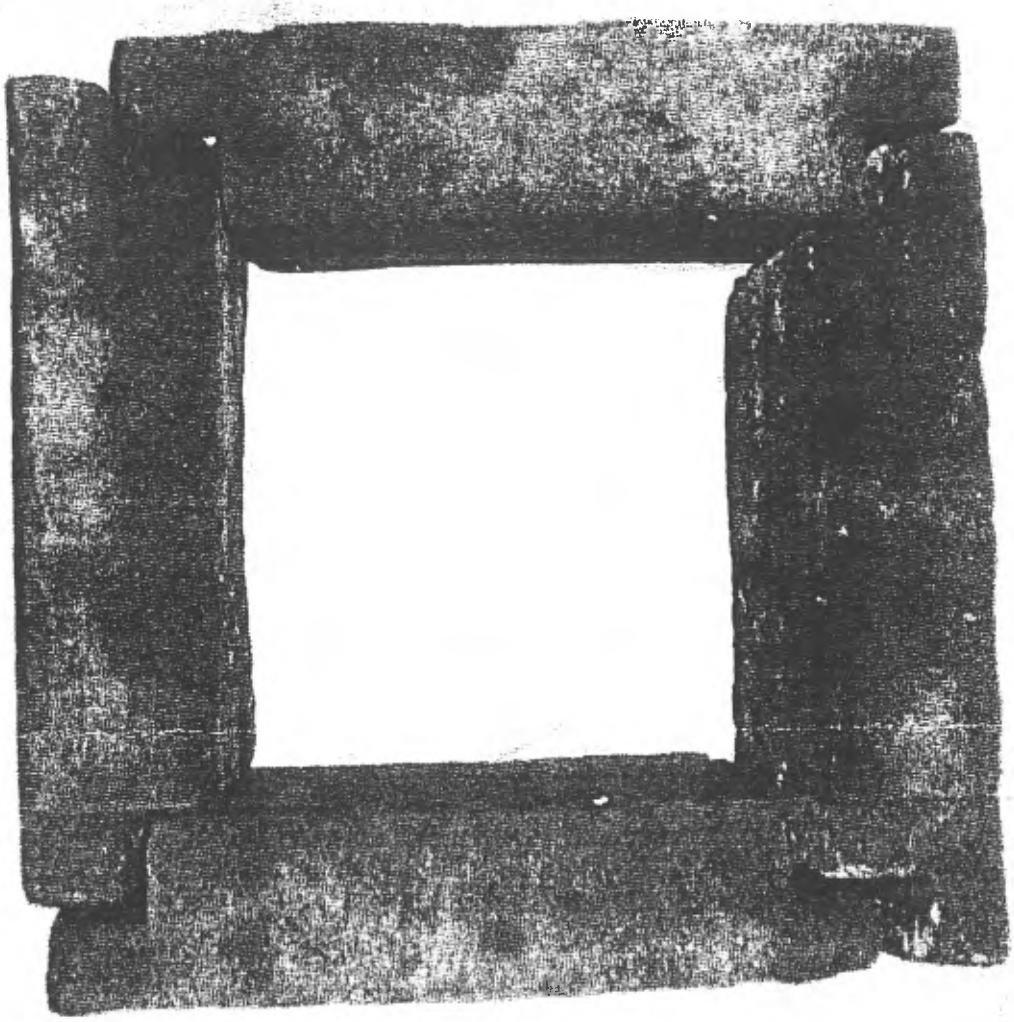
DAVID H. KENNETT

using J. Newman, *The Buildings of England :North East and East Kent,* London: Penguin Books, 3rd edition, 1983, and J. Newman, *The Buildings of England: West Kent and the Weald.* Harmondsworth: Penguin Books: 2nd edition, 1976 and Marcus Binney in *The Times.* 24 March 2006.

DRAIN BRICKS FOUND AT OFFHAM, NEAR LEWES, EAST SUSSEX

The bricks illustrated in figure 2 (opposite) have been found adjacent top the site of a former granary. There are similar examples in the collection of the Weald and Downland Open-Air Museum at Singleton, West Sussex, but it is not known at which brickyards they were made or at what date. Can any member through light on the subject.

MOLLY BESWICK
Halcyon, Battle Road, Pummetts Town, Healthfield East Sussex TN21 9DR
tel: 01435-830350



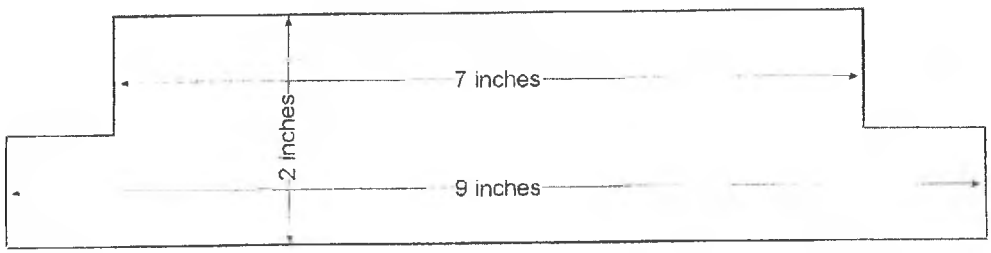


Fig. 4 Drain bricks from Offham, East Sussex, showing four bricks fitted together and a cross-section of a single brick.

A STAMPED BRICK FROM THE ISLE OF WIGHT
(*BBS Information,* **99,** February 2006, page 17)

In the Ministry of Works *Directory of GB Brickworks* dated August 1943, the initials on brick, P.B. & TILE Co, are from Pwllgwaun Brick & Tile Co., Pwllgwaun, Pontypridd, Glamorgan. The clay is a coal measures type.

This may suggest a Welsh origin for the brick although the best-known Newtown in Wales is the Montgomeryshire one, about 55 miles north of Pontypridd. Possibly the firm had more than one works in different parts of Wales.

MIKE CHAPMAN

If the brick was manufactured at a brickworks in Newtown, Montgomeryshire, this would not be an implausible suggestion. Newtown has many brick buildings and while St David's church of 1843-47 in buff brick is probably the best known, many of the other brick buildings are in red brick. Some are clearly built of the products of the Ruabon yards such as the Royal Welsh Warehouse, but their fierce red is not the only shade known. The brick of the enquiry is described as pinkish red in colour and without having seen this particular artifact, one cannot make exact comparisons with the subject of this query; however, pinkish red is not unknown in Newtwon, Powys (formerly Montgomeryshire). Red brick buildings which do not appear to use the products of the Ruabon yards include the Town Hall, one of the last works of Colwyn Foulkes, built in the mid 1960s, and some of the late works of Herbert Carr, for many years the County Architect for Montgomeryshire.

DAVID H. KENNETT

Changes of Address

If you move house, please inform the society through its Membership Secretary, Anthony A. Preston at 11 Harcourt Way, Selsey, West Sussex PO20 0PF.

The society has recently been embarrassed by material being returned to various officers from the house of someone who has moved but not told the society of his/her new address.

Subscriptions for 2006 were due in January and if unpaid should be forwarded to the Membership Secretary.

BRITISH BRICK SOCIETY
MEETINGS IN 2006

Saturday 30 September 2006
London Autumn Meeting
London north of the City.
A walk beginning at Angel and then looking at buildings south of this: the new Lilian Baylis Theatre, the buildings of the former Metropolitan Water Board, the buildings of City University on Northampton Square, the former Finsbury Town Hall, buildings on Exmouth Market including the church of the Holy Redeemer. In the afternoon we hope to see the Finsbury Health Centre, buildings on Clerkenwell Green including St James' church, the former Holborn Town Hall before going east to Old Street and the Leysian Mission, Moorfields Eye Hospital and the Wesley Chapel.

Further details of the London Autumn Meeting 2006
are included in this mailing.

The British Brick Society is always looking for new ideas for future meetings.
Suggestions of brickworks are particularly welcome.
Suggestions please to James Campbell, Michael Oliver or David Kennett.

The progamme of meetings for 2007 is in the course of being arranged.